

# Work Order ID 57198

March 29, 2010 11:23:57 AM

Page 1

Item ID: D212-664-201TRN

Accept

Revision ID:

Item Name: Crosstube Turning Detail

Setup Start

Stop

Start Date: 29/03/2010 Start Qty: 1.00

Required Date: 05/04/2010 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date: 10-3-09

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
<b>Draw Nbr</b>	<b>Revision Nbr</b>								
D212-664-241	Rev D								
100	MORI SEIKI CNC LATHE LARGE	0.00							
Mori Seiki	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA114 2-Turn first side as per Folio FA114 3- File transition lines smooth.								
110	QC1- Inspect dimensions to dimension sheet	0.00							
QC	Memo	0.00							
Quality Control									
120	MORI SEIKI CNC LATHE LARGE	0.00							
Mori Seiki	Memo	0.00							
Mori Seiki CNC Lathe Large	1-Turn second side as per Folio FA114 2- File transition lines smooth. 3-Remove sand and plugs 4- scribe batch # and part # as per dwg								

Q.A 10 - 05 - 03

Q.A 10 - 05 - 03

Q.A 10 - 05 - 03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130 QC1- Inspect dimensions to dimension sheet 0.00



QC Memo 0.00

Quality Control

G.A. 10 - 05 - 030

140 QC8- Inspect parts - second check 0.00



QC Memo 0.00

Quality Control

(1X) MB 10-05-03

150 Crosstubes Chemical Conversion 0.00



HandFXtube Memo 0.00

Hand Finishing Crosstubes Chemical Conversion Coat as per within 24 hours of machining

(1X) MB 10-05-03

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Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

(1) 0 BE 10/05/03

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack  
Location: *K-1000 cel*

(14) 2 MB 10-05-03

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/05/04  
R/10-5-04  
(1)

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# Picklist Print

March 29, 2010 11:24:03 AM

Page 1

Work Order ID: 57198



Parent Item: D212-664-201TRN



Parent Item Name: Crosstube Turning Detail

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec  
IPP Rev B 08.04.02 Removed polish EC verified DD

Start Date: 29/03/2010

Required Date: 05/04/2010

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6006-129		Manufactured	No			120	Each	54.0000	1.0000			
Crosstube Material												

*o.d. 10-05-03* (2)

Warehouse	Loc Qty	Loc Code
Location		
Main Warehouse		
LG	54	
23970	2	
26550	15	
34690	11	
38338	26	

W/O:		WORK ORDER CHANGES					
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<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	57198
<b>Description:</b> Crosstube Assembly (205/212 High Aft)	<b>Part Number:</b>	D212-664-241
<b>Inspection Dwg:</b> D212-664-241 <b>Rev:</b> C.D		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.200	+/-0.010	0.200	✓		
	R0.063	+/-0.010	R0.063	✓		
	2.990	+0.005/-0.000	2.991	✓		
	5.237	+/-0.030	5.237	✓		
	2.600	+0.005/-0.000	2.605	✓		
	2.686	+0.005/-0.000	2.689	✓		
	2.770	+0.005/-0.000	2.775	✓		
	2.854	+0.005/-0.000	2.859	✓		
	2.938	+0.005/-0.000	2.943	✓		
	3.021	+0.005/-0.000	3.026	✓		
	3.133	+0.005/-0.000	3.137	✓		
	3.179	+0.005/-0.000	3.184	✓		
SIDE B	0.200	+/-0.010	0.200	✓		
	R0.063	+/-0.010	R0.063	✓		
	2.990	+0.005/-0.000	2.991	✓		
	5.237	+/-0.030	5.237	✓		
	2.600	+0.005/-0.000	2.605	✓		
	2.686	+0.005/-0.000	2.689	✓		
	2.770	+0.005/-0.000	2.775	✓		
	2.854	+0.005/-0.000	2.859	✓		
	2.938	+0.005/-0.000	2.943	✓		
	3.021	+0.005/-0.000	3.026	✓		
	3.133	+0.005/-0.000	3.137	✓		
	3.179	+0.005/-0.000	3.184	✓		
	124.36	+/-0.020	124.360	✓		

<b>Measured by:</b>	P.M.
<b>Date:</b>	10.05.03

<b>Audited by:</b>	KJ 10-05-03
<b>Date:</b>	10-05-03

<b>Prototype Approval:</b>	N/A
<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	
B	06.03.09	Tolerance for 5.237 was +/-0.001	KJ/JLM	
C	07.05.08	Dwg Rev. updated	KJ/JLM	

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Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	4	4	MS21920-28	CLAMP (OR MS21920-30)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

# **GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6006-129  
FINISHED LENGTH = 124.362±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-241 = 44.2 lbs (PER IIN-D212-664)  
D212-664-241B = 44.2 lbs (PER IIN-D212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO  
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UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER NO. 57198

*10-3-89*

**RELEASED**  
R 2009-10-29

D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>PH</i>		
DRAWN	RF		
CHECKED	<i>Q</i>		
MFG. APPR.	<i>DS</i>		
APPROVED	<i>AP</i>		
DE APPR.	<i>H</i>		
DATE	09.09.30		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. D DRAWING NO. D212-664-241 SHEET 1 OF 4 TITLE CROSSTUBE ASS'Y (205/212 HI AFT) SCALE NTS	
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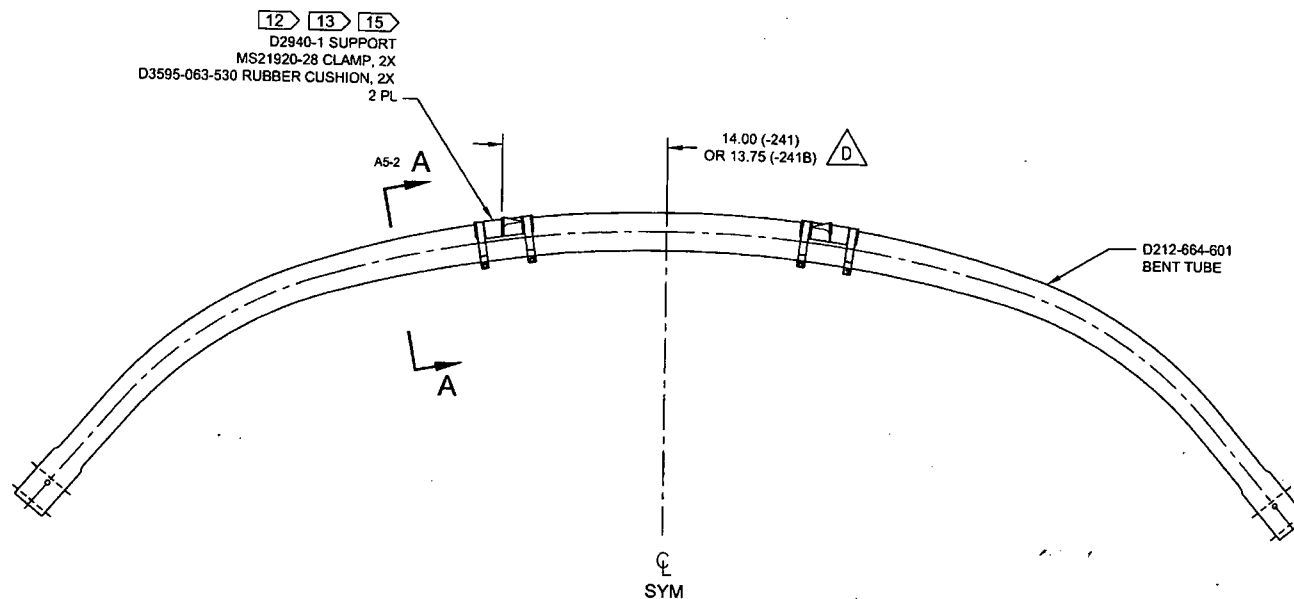
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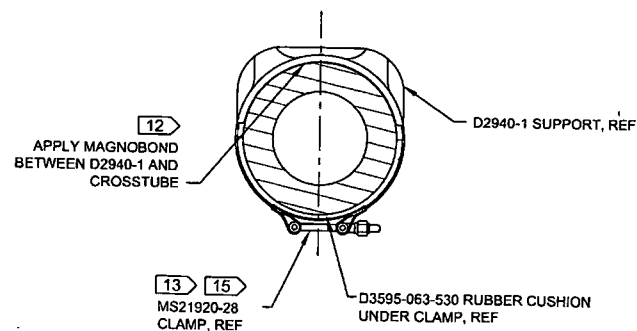
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**D212-664-241/-241B**  
**ASSEMBLY DETAIL** D



**SECTION A-A** D6-2  
SCALE 4X

*w/o 5719f*

**RELEASED**  
2009-10-28

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DS	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-241	SHEET 2 OF 4
APPROVED	AP	TITLE	SCALE
DE APPR.	11	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
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**Dart Aerospace Ltd**

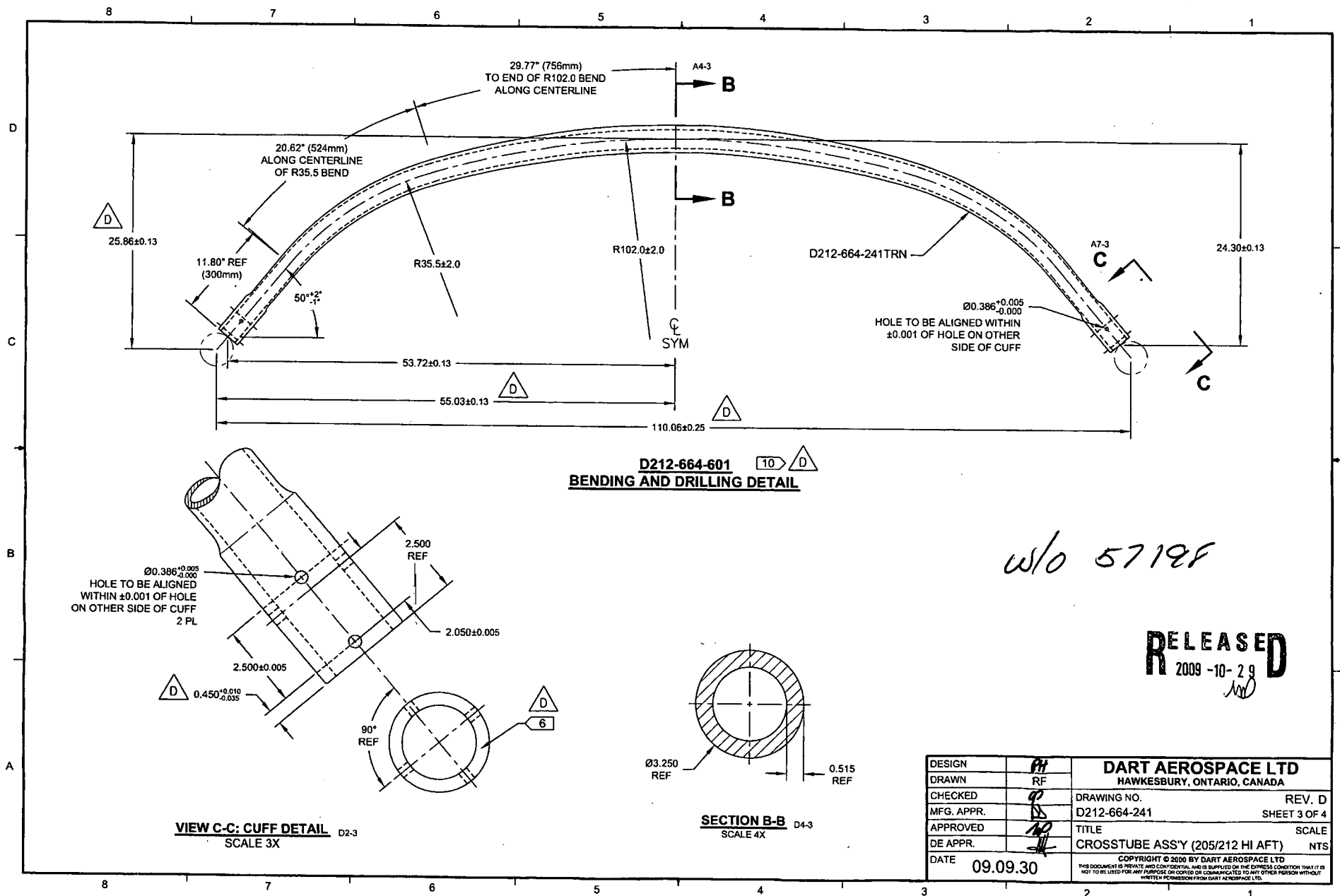
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CHECKED	92	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-241	SHEET 3 OF 4
APPROVED	120	TITLE	SCALE
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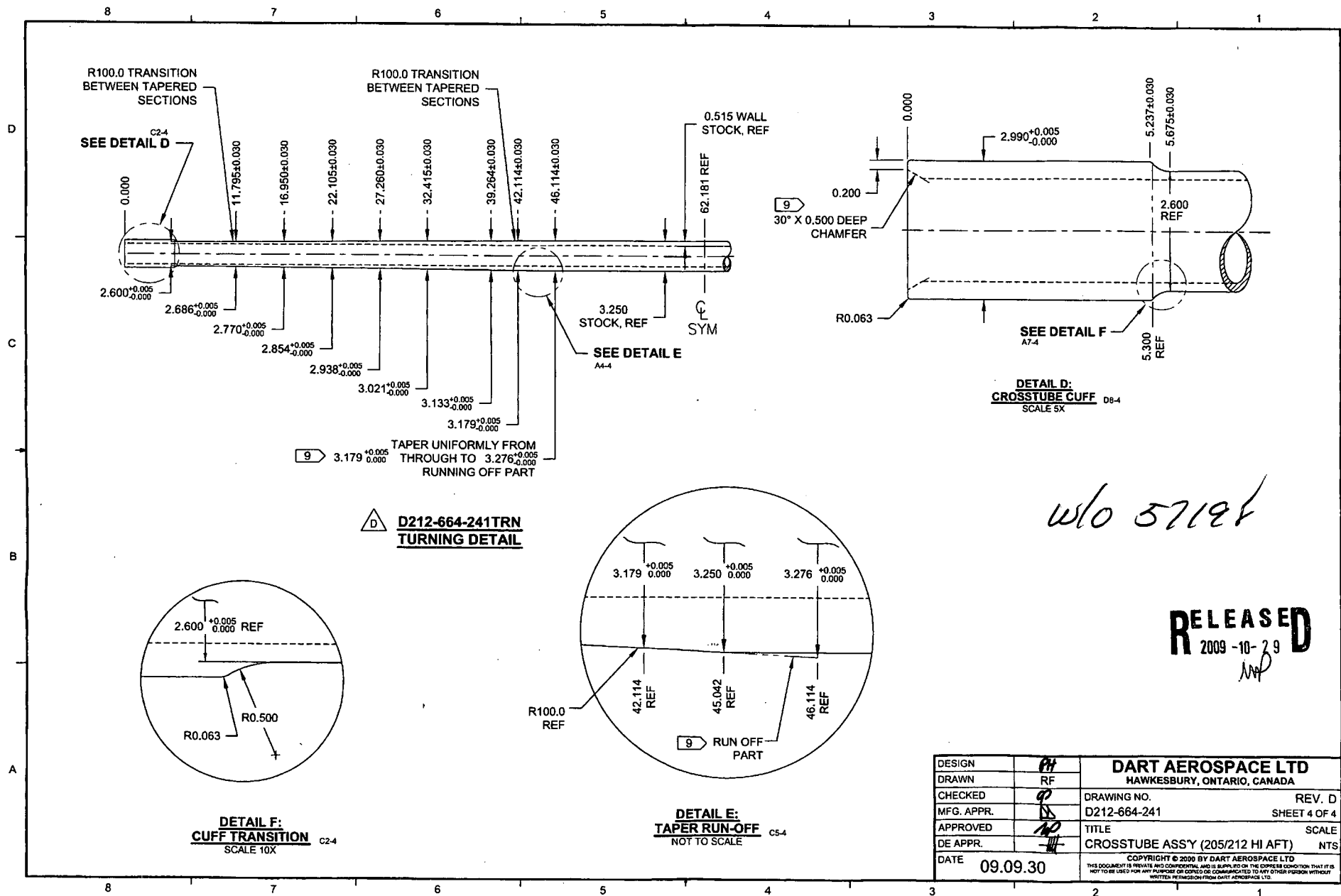
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